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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/211,469 | 12/14/1998 | OLEG DRAPKIN | 0100.990020 | 9874 |

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| EXAMINER | |
|---|---|
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| ART UNIT | PAPER NUMBER |
|---|---|
| 2816 | |

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/211,469 | DRAPKIN ET AL. | |
| | Examiner | Art Unit | |
| | An T. Luu | 2816 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *07 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,2,4,6-10,12-16 and 18-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *22* is/are allowed.

6)☒ Claim(s) *1,2,4,8,10,14-16,18 and 23* is/are rejected.

7)☒ Claim(s) *6,7,9,12,13,19,20,21,24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

Applicant's Amendment filed on 1-7-05 has been received and entered in the case. The rejections set forth in the previous Office Action are maintained as indicated below.

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2 and 23 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 appears to be misdescriptive because figures 2 and 3 do not show limitation "the switchable voltage supply circuit is coupled to at least **an I/O pad supply voltage** and selects the differential receiver supply voltage that is a higher voltage **than** the I/O pad supply voltage" (emphasis added). Further, limitation "selects the differential receiver supply voltage that is a higher voltage than the I/O pad supply voltage" is unclear since it is impossible to have a voltage which is higher than itself because the differential receiver supply voltage is a voltage at the I/O pad supply voltage. Examiner considers limitation "that is a higher voltage **than** the I/O pad supply voltage" to be "that is a higher voltage **of** the I/O pad supply voltage".

Claim 23 is rejected for being dependent on the rejected claim as noted above.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by the Setty et al. reference (U.S. Patent 6,091,300).

Setty discloses in figures 3 and 4 an apparatus comprising a single gate differential receiver (M1, M2) that receives an input voltage (Vip; Vim); and a switchable voltage supply circuit (Sa, Vdd EXTERNAL and Vdd INTERNAL), operatively coupled to the single gate differential receiver, switchable through at least one control signal (inherency by virtue of a switch) to select a differential receiver supply voltage (Vdd INTERNAL) for the single gate oxide differential receiver as required by claim 1. It is noted that Vdd INTERNAL is different from an input/output pad supply voltage (Vdd EXTERNAL terminal); and Vdd is higher than either Vip or Vim since Vip or Vim is set at common-mode voltage which is Vdd-ABS(Vgs), see col. 1, line 28+.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4, 8, 10, 14-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Setty et al reference (U.S. Patent 6,091,300).

In claim 4, Setty discloses all the claimed inventions including teaching of supply voltage to be a voltage level higher than a maximum voltage level of the input voltage (col. 1, lines 28-31 and 43-44). Setty does not disclose a reference voltage applying to a first differential input as required by claim. However, it is known in the art that differential receiving circuit is for comparing two different input signals. It can be specifically either labeled as a comparator if one of input is kept at known (reference) level so that the other input can be determined if it is higher or lower than a known level, or labeled as an amplifier if difference between two inputs is amplified for further processing. An Official Notice is taken for the above fact (see enclosed cited prior arts, PTO-948).

Claims 8 and 18 claim an application wherein the invention could be utilized. It would have been obvious for one skilled in the art to employ the invention in any environment which has practical purpose(s) since it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987). It is noted that core logic takes place of a video graphics

processor as required by claim 18 and an isolation output buffer is for reshaping a signal. It would have been obvious to one skilled in the art to incorporate a buffer at the output of Setty's circuit for reshaping a signal to meet the requirements of device along the processing line. In fact, any signal device (i.e., memory, graphic, video devices) can be coupled to the output of the differential receiver described above via a buffer or driver without changing the scope of Setty's invention since the differential receiver is for providing a suitable signal for further processing as needed by application.

As to claim 10, it is a combination of claims 1, 4 and 18. Therefore, it is rejected for the same reasons set forth above.

As to claims 14-16, they are rejected for reciting step/method derived from a claimed apparatus of claims 1, 4, 10 and 18 noted above.

***Response to Arguments***

7. Applicant's arguments filed 1-7-05 have been fully considered but they are not persuasive.

Regarding the rejection of claim 1 under 35 USC 102, Applicant has argued that Setty fails to teach "*wherein at least one of the selected receivers' supply voltages is higher than a maximum voltage level of the input voltage*". Examiner respectfully disagrees since col. 3 of Setty discloses Vip or Vim being less than Vdd-ABSVgs or equal to Vdd-Va-Vgs. In other words, either receiver supply voltages (i.e., Vdd or Vdd-Va) is selected, it still higher than a maximum voltage level of the input voltage. Further, Applicant has argued that "Setty does not appear to limit Vip and Vim from exceeding Vdd or Vdd-Va". Examiner respectfully disagrees

since col. 3 of Setty discloses specific range of Vip or Vim such that Vip and Vim will not be exceeding Vdd or Vdd-Va (i.e., being less than Vdd-ABSVgs or equal to Vdd-Va-Vgs).

Regarding the rejection of claims 4, 8, 10, 14-16 and 18 under 35 USC 103, Applicant has argued that a prima facie case of obviousness is not established since Setty does not teach the limitation "*wherein the switchable voltage supply...a voltage higher than a maximum voltage level of the input voltage*". Examiner respectfully disagrees with the above assertion because (1) explanation is presented above, (2) either Vdd INTERNAL or VDD EXTERNAL is higher than the max voltage level of the input line. Therefore, selection of either voltages still meets the recitation of claim.

***Allowable Subject Matter***

8. Claim 22 is allowed.

9. Claims 2 and 23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. Claims 6, 7, 9, 12, 13 19-21 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to disclose an apparatus and method thereof comprising elements being configured as recited in claims. Specifically, none of the prior art teaches *the switchable voltage supply circuit is coupled to at least an input/output pad supply voltage and selects the*

*differential receiver supply voltage that is a higher voltage of the I/0 pad supply voltage* as required by claim 2; *a second control signal* as required in claims 6 and 12; *an input transistor* as required by claims 7 and 13; *a common current source* as required by claim 9; *selection of either I/O pad supply or reference with respect to a maximum input signal voltage and the control signal indicates a maximum input signal voltage to the single gate oxide differential receiver to be less than the reference supply voltage , and wherein the switchable voltage supply circuit provide the I/O pad supply voltage as the differential receiver supply voltage when the control signal indicates a maximum input signal voltage to be greater than the reference supply voltage* as required by claims 19-22; *the single gate oxide differential receiver includes a transistor having a gate, a source and a drain such that at least one of: the gate to the source and the gate to the drain cannot withstand the higher voltage of the I/0 pad supply* voltage as required by claim 23; and *the drain is coupled to the differential receiver supply voltage such that when the input voltage is at a maximum input voltage, the input transistor* is off as required by claim 24.

***Conclusion***

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to An T. Luu whose telephone number is 571-272-1746. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

An T. Luu
1-15-05AL

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